

Carbon cycling within the Nankai Trough accretionary prism

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Distribution of carbon isotopic compositions of methane and total dissolved carbonate can be explained by anaerobic methane oxidation within the upper zone of sediments and subsequently carbonate reduction for methane production, but the values are higher than those observed in Hole808 during ODP Leg131. The higher isotopic compositions indicate thermogenic methane migrated from the deeper zone of sediments.